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EXAMINER

PEREZ DAPLE, AARON C

ART UNIT PAPER NUMBER

2154

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/862,642

Applicant(s)

AIKEN ET AL.

Examiner

Aaron C. Perez-Daple

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>see note</u> . | 6) <input type="checkbox"/> Other: _____ |



NOTE: IDS's dated 2/22/05, 12/23/04, 8/19/04 attached.

DETAILED ACTION

1. This Action is in response to Amendment filed 12/3/04, which has been fully considered.
2. Claims 1-27 are presented for examination.
3. This Action is FINAL.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the specification does not appear to support the new limitation recited in claims 1, 24 and 26 of “determining *at the data processing system executing the application* if a received request for the data processing system to originate a connection is associated with the application.” If support can be found in the original disclosure, then the specification should be amended to support this feature. Otherwise, the subject matter should be cancelled from the claims.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
6. **Claims 1-4, 24 and 26** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in

the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the original disclosure does not appear to be enabling for the new limitation of “determining *at the data processing system executing the application* if a received request for the data processing system to originate a connection is associated with the application.” Applicant is respectfully requested to point out where this limitation is supported in the original disclosure or cancel the subject matter from the claims.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. **Claims 1-4, 24 and 26** are rejected under 35 U.S.C. 102(b) as being anticipated by Alteon (Alteon Web Systems, “The Next Step in Server Load Balancing,” November, 1999.) (hereinafter Alteon). Alteon is cited by the Applicant in IDS paper filed on 8/1/02.
9. **Examiner’s Interpretation:** The Examiner interprets that Alteon teaches originating the connection at the application executing on the data processing system, because originating *the connection* does not necessarily require originating *the connection request*. In other words, Alteon teaches that the client originates the connection request (see pg. 1, Overview and pg. 5, TCP/IP Server Load-Balancing Operation). However, the connection itself is not established until the application sends a response to the client, which response includes the binding VIP address. Therefore, the connection itself originates at the application.

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10. As for claims 1, 24 and 26, Alteon teaches a method of establishing a connection originated by an application executing on a data processing system in a cluster of data processing systems, the method comprising:

associating a dynamic network address with the application at the data processing system on which the application is executing (pg. 1, Overview);

determining *at the data processing system executing the application* if a received request for the data processing system to originate a connection is associated with the application (pg. 1, Overview; pg. 5, TCP/IP Server Load-Balancing Operation); and

establishing the connection from the data processing system executing the application utilizing the associated dynamic network address as a source address for the connection if the request is associated with the application (pg. 5, TCP/IP Server Load-Balancing Operation, especially paragraph 4).

11. As for claim 2, Alteon teaches the method of claim 1, further comprising:

determining if the application has specified a network address for the requested connection (pg. 5, TCP/IP Server Load-Balancing Operation); and

utilizing the specified network address to establish the connection if the application has specified a network address (pg. 5, TCP/IP Server Load-Balancing Operation); and

wherein the step of establishing the connection further comprises selectively utilizing the associated dynamic network address as the source address for the connection if the application has not specified a network address for the requested connection (pg. 5, TCP/IP Server Load-Balancing Operation, especially paragraph 4).

12. As for claim 3, Alteon teaches the method of claim 2, wherein the step of determining if the application has specified a network address for the requested connection comprises determining if a socket for the connection has been bound to a network address (Note, a socket is merely an endpoint of a connection, typically identified by the address and/or port number. Therefore, binding an address and/or port number is equivalent to binding a socket. See cited definition from techdictionary.com.; pg. 5, TCP/IP Server Load-Balancing Operation).

13. As for claim 4, Alteon discloses the method of claim 1, wherein the application comprises one of a plurality of instances of an application executing on the data processing system in the cluster of data processing systems;

wherein the step of associating a dynamic network address with the application at the data processing system on which the application is executing comprises associating a dynamic network address with the one of the plurality of instances of the application at the data processing system on which the one of the plurality of instances of the application is executing (pgs. 1-2, Overview); and

wherein the step of determining if a request for the data processing system to originate a connection is associated with the application comprises determining if a request for the data processing system to originate a connection is associated with the one of the plurality of instances of the application (pgs. 1-2, Overview).

14. **Claims 5-13, 15-22, 25 and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Alteon in view of Locklear et al. (US 6,252,878 B1) (hereinafter Locklear).

15. **Examiner's Interpretation:** The Examiner interprets that Alteon teaches originating the connection at the application executing on the data processing system, because originating *the connection* does not necessarily require originating *the connection request*. In other words, Alteon teaches that the client originates the connection request (see pg. 1, Overview and pg. 5, TCP/IP Server Load-Balancing Operation). However, the connection itself is not established until the application sends a response to the client, which response includes the binding VIP address. Therefore, the connection itself originates at the application. The Examiner further interprets that the "switch server" of Alteon is part of the data processing system.
16. As for claim 5, 25 and 27, Alteon discloses a method of selecting a source address for a connection originated by an application executing on a data processing system in a cluster of data processing systems, comprising:
- associating a dynamic virtual IP address (DVIPA) with the application at a communication protocol stack of the data processing system in the cluster of data processing systems executing the application so as to utilize the DVIPA as the source address for the connection originated by the application (pgs. 1-2, Overview; pg. 5, TCP/IP Server Load Balancing Operation, especially paragraphs 1-4; The Examiner notes that a communication protocol stack is inherent for processing TCP/IP communications. See cited definition from techdictionary.com.).
17. As for claim 6, Alteon discloses a method of claim 5, wherein the step of associating a DVIPA with the application comprises:

receiving a connection request for a connection at the communication protocol stack (pg. 1, Overview, second paragraph);

determining if the connection request received at the communication protocol stack is associated with the application (pg. 1, Overview, fourth paragraph; pgs. 9-11, especially Persistence Policies, Hash and SSL Session Tracking); and

selecting the DVIPA as the source address for the connection if the connection request is associated with the application (pg. 5, TCP/IP Server Load-Balancing Operation, especially paragraphs 1-4).

18. As for claim 7, Alteon discloses the method of claim 6, further comprising:

determining if the application is bound to an IP address (pg. 5, TCP/IP Server Load-Balancing Operation; pgs. 5-6, UDP/IP Server Load-Balancing Operation); and

selecting the IP address to which the application is bound as the source address if the application is bound to an IP address (pg. 5, TCP/IP Server Load-Balancing Operation; pgs. 5-6, UDP/IP Server Load-Balancing Operation; see also pgs. 9-11, especially Persistence Policies and Hash); and

wherein the step of selecting the DVIPA comprises selecting the DVIPA as the source address for the connection if the connection request is associated with the application and the application is not bound to an IP address (pg. 5, TCP/IP Server Load-Balancing Operation; pgs. 5-6, UDP/IP Server Load-Balancing Operation).

19. As for claim 8, Alteon discloses the method of claim 7, further comprising:

establishing at the communication protocol stack a predefined association of the DVIPA and the application;

wherein the step of determining if the connection request received at the communication protocol stack is associated with the application comprises determining if the connection request is from the application (pg. 5, TCP/IP Server Load-Balancing Operation; pgs. 5-6, UDP/IP Server Load-Balancing Operation); and

wherein the step of selecting the DVIPA as the source address for the connection if the connection request is associated with the application comprises selecting the DVIPA as the source address for the connection if the connection request is from the application and a predefined association of the DVIPA and the application has been established (pg. 5, TCP/IP Server Load-Balancing Operation; pgs. 5-6, UDP/IP Server Load-Balancing Operation).

20. As for claim 9, Alteon discloses the method of claim 8, wherein the step of establishing at the communication protocol stack a predefined association of the DVIPA and the application comprises processing at the communication protocol stack a configuration statement which specifies the DVIPA and an application with which the DVIPA is associated (pg. 5, TCP/IP Server Load-Balancing Operation; pgs. 5-6, UDP/IP Server Load-Balancing Operation).

21. As for claim 10, Alteon discloses the method of claim 8, further comprising:
determining if the DVIPA is configured for the communication protocol stack (pg. 7, TCP Connection Monitoring); and

generating an error message if the DVIPA is not configured for the communication protocol stack (pg. 7, TCP Connection Monitoring).

22. As for claim 11, Alteon discloses the method of claim 8, further comprising:
determining if the DVIPA is active on the communication protocol stack (pg. 5, TCP/IP Server Load-Balancing Operation; pgs. 5-6, UDP/IP Server Load-Balancing Operation);

activating the DVIPA if the DVIPA is not active and if the DVIPA is in a range of DVIPAs specified for the communication protocol stack (pg. 5, TCP/IP Server Load-Balancing Operation; pgs. 5-6, UDP/IP Server Load-Balancing Operation).

23. As for claim 12, Alteon discloses the method of claim 11, further comprising generating an error message if the DVIPA is not active and is not in a range of DVIPAs specified for the communication protocol stack (pg. 7, TCP Connection Monitoring).
24. As for claim 13, Alteon discloses the method of claim 6, wherein the application comprises an instance of a plurality of instances of an application executing on the data processing system (pg. 7, TCP Connection Monitoring).
25. As for claim 15, Alteon discloses a system for establishing a connection between an application and a client, the system comprising:
 - a cluster of data processing systems (Fig. 2);
 - the application executing on a data processing system in the cluster of data processing systems (pg. 3, Applications); and
 - a communication protocol stack on the data processing system in the cluster of data processing systems, the communication protocol stack being configured to associate a dynamic virtual Internet protocol address (DVIPA) with the application so that the DVIPA is utilized as a source address for a connection request from the application (pg. 5, TCP/IP Server Load-Balancing Operation; pgs. 5-6, UDP/IP Server Load-Balancing Operation).
26. As for claim 16, Alteon discloses the system of claim 15, wherein the communication protocol stack is further configured determine if the application is bound to an IP address, select the IP address to which the application is bound as the source address if the application

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is bound to an IP address and select the DVIPA as the source address for the connection if the connection request is from the application and the application is not bound to an IP address (pg. 5, TCP/IP Server Load-Balancing Operation; pgs. 5-6, UDP/IP Server Load-Balancing Operation).

27. As for claim 17, Alteon teaches the system of claim 15, wherein the communication protocol stack is further configured to establish a predefined association of the DVIPA and the application and select the DVIPA as the source address for the connection if the connection request is from the application and a predefined association of the DVIPA and the application has been established (pg. 5, TCP/IP Server Load-Balancing Operation; pgs. 5-6, UDP/IP Server Load-Balancing Operation).
28. As for claim 18, Alteon teaches the system of claim 17, wherein the communication protocol stack is further configured to establish the predefined association of the DVIPA and the application by processing a configuration statement which specifies the DVIPA and an application with which the DVIPA is associated (pg. 5, TCP/IP Server Load-Balancing Operation; pgs. 5-6, UDP/IP Server Load-Balancing Operation).
29. As for claim 19, Alteon teaches the system of claim 17, wherein the communication protocol stack is further configured to determine if the DVIPA is configured for the communication protocol stack and generate an error message if the DVIPA is not configured for the communication protocol stack (pg. 7, TCP Connection Monitoring).
30. As for claim 20, Alteon teaches the system of claim 17, wherein the communication protocol stack is further configured to determine if the DVIPA is active on the communication protocol stack and activate the DVIPA if the DVIPA is not active and if the

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DVIPA is in a range of DVIPAs specified for the communication protocol stack (pg. 5, TCP/IP Server Load-Balancing Operation; pgs. 5-6, UDP/IP Server Load-Balancing Operation).

31. As for claim 21, Alteon teaches the system of claim 20, wherein the communication protocol stack is further configured to generate an error message if the DVIPA is not active and is not in a range of DVIPAs specified for the communication protocol stack (pg. 7, TCP Connection Monitoring).
32. As for claim 22, Alteon teaches the system of claim 15, wherein the application comprises an instance of a plurality of instances of an application executing on the data processing system (pg. 7, TCP Connection Monitoring).

Claim Rejections - 35 USC § 103

33. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

34. **Claims 14 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Alteon in view of Applicant's admitted prior art (pgs. 2-3 of the specification) (hereinafter AAPA).
35. As for claims 14 and 23, Alteon does not specifically teach using an OS/390 Sysplex system. Applicant admits that it is well-known in the art to use an OS/390 Sysplex system for managing the assignment of virtual addresses. It would have been obvious to one of

ordinary skill in the art at the time of the invention to modify Alteon and Locklear by using an OS/390 Sysplex system in order to manage the assignment of virtual addresses, as taught by AAPA above.

Response to Arguments

36. Applicant's arguments with respect to the Locklear reference have been considered but are moot in view of the new ground(s) of rejection.
37. Applicant's arguments filed 12/3/04 with respect to the Alteon reference have been fully considered but they are not persuasive.

First, on page 12 of the Remarks, Applicant asserts that the cited portion of Alteon does not disclose "associating a dynamic virtual IP address (DVIPA) with the application at a communication protocol stack of the data processing system in the cluster of data processing systems so as to utilize the DVIPA as the source address for the connection originated by the application." The Examiner respectfully disagrees. The details of Applicant's arguments here are somewhat difficult to follow. Whether or not the source address substitution occurs in response to a client request does not appear relevant to the claim as recited, since the client request still comes *after* establishing the connection (see Examiner's Interpretation above). However, the Examiner also points to the fourth paragraph of the section "TCP/IP Server Load-Balancing Operation," which clearly recites that the same source address substitution occurs for packets traveling from the data processing system to the client. Therefore, in either case, Alteon properly anticipates this limitation of the claims.

With respect to the remainder of Applicant's arguments on pages 12-14, the Examiner interprets that the web switch is part of the "cluster of data processing systems executing the application." Therefore, even if the web switch performs the address substitution, this limitation is properly anticipated by Alteon. Moreover, the Examiner notes that it is well-known and obvious to those of ordinary skill in the art that a web switch may comprise a server for running applications. Although the primary embodiment of Alteon discloses the web switch residing on a separate machine from the servers, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the web switch and one or more servers on the same machine. In addition, the Examiner finds that the "application" may be interpreted as the "session" of Alteon, which runs on both the web switch and the server. Regardless, the web switch certainly comprises part of the same data processing system, as recited in the claims.

With respect to the dependent claims and claim 2 in particular, the Examiner clarifies that the session is not the same as the connection. That is, the connection is a TCP connection established according to the TCP/IP protocols. As detailed in Alteon, the connection may then be associated with a session having a DIVPA. If a session has not yet been established, a new one is created and a DIVPA is assigned. If a session has already been established, new connections from the same application or client will typically be assigned the same DIVPA that has already been established for the session, as determined by any of a variety of "persistence policies" detailed on pgs. 9-11 of Alteon. Here, the session may be interpreted as the claimed "application" (or the session may further be interpreted as having a corresponding application). Thus, the "determining" step of claim 2 is anticipated by

determining whether a session with a corresponding DIVPA has already been established. If so, then the connection is assigned to the same session and the same address is "utilized" as the source address for the connection. Otherwise, a new session would be started having a new DIVPA, which anticipates the final limitation of claim 2. Therefore, the limitations of the dependent claims are properly anticipated by Alteon.

Conclusion

38. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

39. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron C. Perez-Daple whose telephone number is (571) 272-3974. The examiner can normally be reached on 9am-5pm.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 6/25/05

Aaron Perez-Daple



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